

Title (en)
BLADED DISC FOR A ROTATING MACHINE, GAS TURBINE ENGINE AND METHOD OF REDUCING THE LOW-CYCLE FATIGUE OF A BLADE WITHIN A BLADED GAS TURBINE ENGINE

Title (de)
BESCHAUFELTE SCHEIBE FÜR EINE DREHENDE MASCHINE, GASTURBINENTRIEBWERK UND VERFAHREN ZUR REDUZIERUNG DER NIEDERZYKLISCHEN ERMÜDUNG EINER SCHAUFEL INNERHALB EINES BESCHAUFELTEN GASTURBINENTRIEBWERKS

Title (fr)
POUR UNE MOTEUR ROTATIF, MOTEUR À

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EP 4202187 A1 20230628 (EN)

Application
EP 22209247 A 20221124

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Abstract (en)
A bladed disc for a rotating machine comprises a central disc (802) that rotates about a central axis (9). The central disc has a series of blades (401; 801) arranged around its periphery. The blades (401; 801) have dovetail roots (402) which engage with slots on the central disc (802). The bladed disc is configured so that there is a pre-loading force between the blades (401; 801) and the central disc (802) such that each blade (401; 801) is forced away from the central axis (9) of the bladed disc. The pre-loading force is equal or greater than 40% of the maximum centrifugal force applied to the blade (401; 801) during a flight cycle. A gas turbine engine comprises such a bladed disc. A method of reducing the low cycle fatigue of a blade (401; 801) within a bladed gas turbine engine comprises: inserting a shaped blade (401; 801) into a corresponding slot on a disc (802) of a gas turbine engine, and inserting a shim between the shaped blade (401; 801) and the disc (802), so as to force the blade (401; 801) away from the centre of the disc (802) of the gas turbine engine. The shim is inserted so that it produces a force between 40% and 100% of the maximum centrifugal force applied to the blade (401; 801) during a flight cycle.

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